

What is claimed is:

1. An image forming apparatus comprising:
  - a photoconductor;
  - a latent electrostatic image forming unit for forming a latent electrostatic image on the photoconductor;
  - a developer amount detection unit for detecting developer amount adhering to the photoconductor surface by a reflecting photosensor;
  - a developing unit for developing the latent electrostatic image using a developer comprising a toner to form a visible image,
  - a transfer unit for transferring the visible image to a recording medium; and
  - a cleaning unit for removing the developer on the photoconductor surface,wherein the developer stirring time per copy when one copy is made from an original, is 2 to 6 times the developer stirring time per copy when two or more copies are made from the original,
  - wherein the toner comprises a binder resin and a wax, and the dynamic frictional coefficient of the toner is 0.15 to 0.45.

2. An image forming apparatus according to Claim

1, wherein the average dispersion diameter of the wax in the toner is 0.1  $\mu\text{m}$  to 0.8  $\mu\text{m}$ .

3. An image forming apparatus according to Claim 1, wherein the wax peak intensity ratio expressed by the following Equation 1 on the toner surface is 0.12 to 0.4,  
<Equation 1>

$$\text{Wax peak intensity ratio} = W/R$$

wherein, "W" expresses the peak height of the characteristic spectrum of the wax calculated by the ATR method using FT-IR, and "R" is the peak height of the characteristic spectrum of the resin calculated by the ATR method using FT-IR.

4. An image forming apparatus according to Claim 1, wherein the average circularity of the toner is 0.91 to 0.98.

5. An image forming apparatus according to Claim 1, wherein the volume average particle diameter of the toner is 4  $\mu\text{m}$  to 10  $\mu\text{m}$ .

6. An image forming apparatus according to Claim 1, wherein the cohesion degree of the toner is 5% to 30%.

7. An image forming apparatus according to Claim 1, wherein the total amount of additive added to the toner surface is 0.5% by mass to 2.0% by mass relative to the toner mass prior to addition.

8. An image forming apparatus according to Claim 1, wherein the developer is one of a one-component developer and a two-component developer.

9. An image forming apparatus according to Claim 1, wherein the outer diameter of the photoconductor is 20 mm to 40 mm.

10. An image forming apparatus according to Claim 1, wherein the photoconductor is an organic photoconductor.

11. An image forming apparatus according to Claim 1, wherein the photoconductor comprises a photoconducting layer containing an organic photo-semiconductor.

12. An image forming apparatus according to Claim 1, wherein the surface frictional coefficient of the photoconductor is 0.3 to 0.7.

13. An image forming apparatus according to Claim 1, wherein the system line speed of the image forming apparatus is 100 mm/sec to 200 mm/sec.

14. An image forming apparatus according to Claim 1, wherein the developer stirring time when one A4 copy is made from one original, is 4 seconds or more.

15. An image forming apparatus according to Claim 1, wherein the reflecting photosensor is a remote type, and the distance between the sensor and the photoconductor surface is 15 mm to 25 mm.

16. An image forming apparatus according to Claim 1, further comprising a developer amount control unit which controls the supplementary amount of developer in the developing unit based on the detection result of the developer amount detection unit.

17. An image forming apparatus according to Claim 1, wherein the cleaning unit is a counter blade.

18. An image forming apparatus according to Claim 1, further comprising a toner recycling unit which

recovers the toner removed from the photoconductor surface by the cleaning unit, and feeds it back to the developing unit.

19. An image forming apparatus according to Claim 1, wherein the latent electrostatic image forming unit contains a charge roller having an outer diameter of 10 mm to 20 mm, the developing unit contains a developing roller having an outer diameter of 10 mm to 20 mm, and the transfer unit contains a transfer roller having an outer diameter of 10 mm to 20 mm.

20. An image forming process comprising the steps of:

forming a latent electrostatic image on a photoconductor;

developing the latent electrostatic image using a developer comprising a toner to form a visible image;

detecting developer amount adhering to the photoconductor surface by a reflecting photosensor;

transferring the visible image to a recording medium; and

cleaning the developer on the photoconductor surface,

wherein the developer stirring time per copy when

one copy is made from an original, is 2 to 6 times the developer stirring time per copy when two or more copies are made from an original,

wherein the toner comprises at least a binder resin and a wax, and the dynamic frictional coefficient of the toner is 0.15 to 0.45.

21. An image forming process according to Claim 20, wherein the average dispersion diameter of the wax in the toner is 0.1  $\mu\text{m}$  to 0.8  $\mu\text{m}$ .

22. An image forming process according to Claim 20, wherein the wax peak intensity ratio expressed by the following Equation 1 on the toner surface is 0.12 to 0.4,  
<Equation 1>

$$\text{Wax peak intensity ratio} = W/R$$

wherein "W" expresses the peak height of the characteristic spectrum of the wax calculated by the ATR method using FT-IR, and "R" is the peak height of the characteristic spectrum of the resin calculated by the ATR method using FT-IR.

23. An image forming process according to Claim 20, wherein the average circularity of the toner is 0.91 to 0.98.

24. An image forming process according to Claim 20, wherein the volume average particle diameter of the toner is 4  $\mu\text{m}$  to 10  $\mu\text{m}$ .

25. An image forming process according to Claim 20, wherein the cohesion degree of the toner is 5% to 30%.

26. An image forming process according to Claim 20, wherein the total amount of additive added to the toner surface is 0.5% by mass to 2.0% by mass relative to the toner mass prior to addition.

27. An image forming process according to Claim 20, wherein the developer is one of a one-component developer and a two-component developer.

28. An image forming process according to Claim 20, wherein the outer diameter of the photoconductor is 20 mm to 40 mm.

29. An image forming process according to Claim 20, wherein the photoconductor is an organic photoconductor.

30. An image forming process according to Claim 20, wherein the photoconductor comprises a photoconducting layer containing an organic photo-semiconductor.

31. An image forming process according to Claim 20, wherein the surface frictional coefficient of the photoconductor is 0.3 to 0.7.

32. An image forming process according to Claim 20, wherein the system line speed is 100 mm/sec to 200 mm/sec.

33. An image forming process according to Claim 20, wherein the developer stirring time when one A4 copy is made from one original is 4 seconds or more.

34. An image forming process according to Claim 20, wherein the reflecting photosensor is a remote type, and the distance between the sensor and the photoconductor surface is 15 mm to 25 mm.

35. An image forming process according to Claim 20, further comprising the step of controlling the supplementary amount of developer in the developing step



based on the detection result of the developer amount detection step.

36. An image forming process according to Claim 20, further comprising the step of recovering the toner removed from the photoconductor surface by the cleaning step, and feeds it back to the developing step.